

## 1 CLAMP-TYPE GARMENT HANGER

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## 3 CROSS-REFERENCE TO RELATED APPLICATION(S)

4 The present application is a continuation-in-part of commonly owned U.S. Patent  
5 Application No. 10/413,697 to Capuano et al., herein incorporated by reference in its  
6 entirety.

## 7 BACKGROUND OF THE INVENTION

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## 9 1. Field of the Invention

10 The present invention relates to clamp-type garment hangers.

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## 12 2. State of the Art

13 Clamp-type garment hangers having two clamps are well-known for the  
14 suspension or hanging of garments such as pants, skirts, etc. The “pinch-type” clamp is a  
15 variety of clamp that has a pair of opposed jaw members between which a portion of the  
16 garment is secured. Provision is made for biasing the jaw members towards each other to  
17 create the clamping force necessary to retain a garment between inner surfaces of the jaw  
18 members. The jaw members are manipulated (typically by squeezing or pinching handles  
19 of the jaw members toward one another) to cause the jaw members to open to receive or  
20 release a garment. To further retain the garment between the inner surfaces of the  
21 members, the clamp or jaw members typically also include inner surface gripping  
22 elements or friction increasing surfaces.

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2 While the known clamp-type hangers are useful in holding a variety of garments,  
3 long garments (such as pants) typically extend far below the garment hanger. This  
4 requires that a display rack that showcases such garments provide a large vertical  
5 dimension. The large vertical dimension limits the number of articles that can be made  
6 readily visible and presented to the customer for a given amount of wall space/display  
7 space. In addition, the large vertical dimension limits the suitability of the clamp-type  
8 hanger in space-limited environments such as shipping containers, cartons, and  
9 warehouses.

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12 hanger that enables a reduction in the vertical dimension of a garment held by the  
13 garment hanger.

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17 It is therefore an object of the invention to provide a clamp-type garment hanging  
18 device which enables retailers to reduce the vertical dimension of a garment, such as  
19 pants, held by the garment hanging device.

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22 device which enables retailers to readily display and present a large number of garments  
23 for a given amount of wall or display space.

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2        It is a further object of the invention to provide a clamp-type garment hanging  
3    device which enables retailers to readily display and present a large number of garments  
4    in a space-limited environment.

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6        It is an additional object of the invention to provide a clamp-type garment  
7    hanging device that enables a retailer to neatly and compactly display and present a  
8    garment to a potential customer.

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10       Another object of the invention is to provide a clamp-type garment hanging  
11    device that permits more compact shipping of garments already hung on the clamp-type  
12    garment hanger.

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14       A further object of the invention is to provide a clamp-type garment hanging  
15    device that provides a storage space savings for garments already hung on the hanger.

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17       In accordance with the present invention, a garment hanging device includes a  
18    crossbar member, a hook member coupled to the crossbar member, and three clamp  
19    members coupled to the crossbar member. One of said three clamp members is disposed  
20    in a central region of the crossbar member. Two of said three clamp members are  
21    substantially disposed on opposite ends of the crossbar member. The clamp members are  
22    used to engage and support a garment, such as a pair of pants. Together, these elements  
23    can be used to reduce the vertical dimension of the garment held by the garment hanger.

1 This enables a retailer to neatly and compactly display and present a garment to a  
2 potential customer. Moreover, it enables a garment display rack to securely showcase a  
3 larger number of articles than was previously possible. Further, it permits the shipping of  
4 more articles on hangers in a given container space and the storage of more goods in a  
5 given container or in a particular warehouse space.

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7 Additional objects and advantages of the invention will become apparent to those  
8 skilled in the art upon reference to the detailed description taken in conjunction with the  
9 provided figures.

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11 BRIEF DESCRIPTION OF THE DRAWINGS

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13 FIG. 1 is a front view of an exemplary embodiment of a clamp-type garment  
14 hanger in accordance with the present invention.

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16 FIGS. 2A, 2B and 2C are sectional views along line 2-2 of the exemplary garment  
17 clamp of the garment hanger of FIG. 1 with FIG. 2A showing the garment clamp with its  
18 jaw members in a fully closed position, FIG. 2B showing the garment clamp with its jaw  
19 members in a fully open position, and FIG. 2C showing the garment clamp with its jaw  
20 members shown closed on a portion of a garment.

21

1 FIG. 3 is a front view of a display rack in which two exemplary hangers of FIG. 1  
2 are used to hang two pairs of pants one under the other in the same vertical space  
3 normally required to hang one pair of pants.

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5 FIG. 4 is a front view of a display rack in which two exemplary hangers of FIG. 1  
6 are used to hang two pairs of pants one under the other in a space-saving configuration.

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8 DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

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10 Referring now to FIG. 1, a garment hanger 10 includes an upper crossbar section  
11 12 having three pinch-type clamps 14A, 14B, 14C. Two of the pinch-type clamps (14A,  
12 14B) are preferably disposed at or near the ends of the upper cross-bar section 12 as  
13 shown. The third pinch-type clamp 14C is disposed at or near the center of the cross-bar  
14 section 12. A partial loop or hook member 16, which may be formed from plastic or  
15 metal wire or any other appropriate material, projects from the cross-bar section 12.  
16 Preferably, the hook member 16 projects from the center of the cross-bar section 12 and  
17 thus is substantially aligned with the third clamp 14C. The hook member 16 may be a  
18 wire secured via threads to the section 12 as shown, or may be integrally formed from the  
19 same material as the upper crossbar section 12, or may be connected to the section 12 in  
20 any other manner. The hook member 16 is used to hang the garment hanger 10 from a  
21 support, such as a bar or wire mesh or other support structure as is well known. As  
22 described below with respect to FIGS. 2A through 2C, the clamps 14A, 14B, 14C each  
23 include a fixed jaw and moveable jaw that are resiliently biased in a close spatial

1 arrangement relative to one another by a spring clip. The jaws are used to engage and  
2 support a garment, such as a pair of pants. The spatial arrangement of the three clamps is  
3 designed such that the two outer clamps 14A and 14B (and possibly the central third  
4 clamp 14C) engage and support the waist of a pair of folded pants disposed therein, while  
5 the central third clamp 14C engages and supports portions of the legs of the pair of folded  
6 pants (as seen in FIGS. 3 and 4).

7

8 Preferably, the upper crossbar section 12 and the fixed jaw of the three clamps  
9 14A, 14B, 14C are molded unitary and integral to one another. Preferably these  
10 elements, along with the moveable jaw of clamps 14A, 14B, 14C, are formed by molding  
11 any one of a number of well known plastic or resin materials, such as "k"-resin,  
12 polystyrene, polystyrene blends, polypropylene, polyethylene, styrene-butadiene  
13 copolymers and blends, polycarbonates, and combinations thereof. Alternatively, the  
14 clamps may be provided with rubber or synthetic pads as is well known in the art, or the  
15 pad portion of the clamp may be formed by a coinjection molding process as is also well  
16 known in the art. If desired, one of the clamps can be different from the other two, or all  
17 three can differ in construction.

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19 Referring now to FIGS. 2A and 2B, each clamp 14 has a back base member 21  
20 which is preferably integrally formed with the top crossbar section 12, and a front lever  
21 member 22 movable relative thereto. The base member 21 includes a handle portion 23  
22 and a jaw end 24. The lever member 22 includes a handle portion 25 which is opposite  
23 the handle portion 23, and a jaw end 26 which is positioned opposite the jaw end 24. The

1 lever member 22 is pivotally supported on the base member 21 along a pivot wall 28 on  
2 the base member 21. The pivot wall 28 is received in a pivot groove 30 on the back of  
3 lever member 22. A C-shaped spring clip 32, preferably made of metal, is dimensioned  
4 to receive a portion of the base member 21 and a portion of the lever member 22 and is  
5 positioned over those portions such that facing inner surfaces of the spring clip 32 bear  
6 against outwardly facing surfaces of the base member 21 and the lever member 22,  
7 respectively. A front end of the spring clip 32 has a flange 38 that engages within an  
8 aperture 40 in the lever member 22 to secure the spring clip 32 to the lever member. A  
9 rear end of the spring clip 32 has a tab 42 which engages a strut 44 spanning an aperture  
10 50 in the base member 21 to secure the spring clip to the base member. The spring clip  
11 32 urges the lever member jaw end 26 towards the base member jaw end 24. The jaws  
12 of the lever member 22 and the base member 21 are used to support a garment 52 as  
13 shown in FIG. 2C.

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15 The inner surfaces of the jaws of the clamp may include teeth as shown in FIGS.  
16 2A - 2C. The teeth grip the garment disposed therebetween. Alternative, the inner  
17 surfaces of the jaws of the clamp may include ridges or "Crease Free" surfaces or other  
18 surfaces that grip the garment disposed therebetween. Exemplary configurations of  
19 garment hangers that use jaws with teeth are shown in co-owned U.S. Patent 6,609,641.  
20 Exemplary configurations of garment hangers that use jaws with ridges are shown in U.S.  
21 Patent Application No. 2003/0126725. Exemplary configurations of garment hangers  
22 that use jaws with "Crease-Free" surfaces are shown in co-owned U.S. Patent 6,199,728.

1    If desired, one of the jaws may have one type of inner surface while the other jaws have a  
2    second type. Or, if desired, all three jaws may have the same or different surfaces.

3

4       The jaws of the clamps of the hanger device are used to engage and support a  
5    garment, such as a pair of pants. Together, these elements can be used to reduce the  
6    vertical dimension of the garment. For example, consider utilizing two garment hangers  
7    in accordance with the present invention to hang two pairs of pants one under the other as  
8    shown in FIG. 3. In this case, the hook members 16 of the respective hangers 10 are  
9    supported by support members 54A, 54B extending from a vertical post (not shown).

10      The outer clamps 14A, 14B (and possibly clamp 14C) of the respective hangers are used  
11    to grasp onto the waists 56A, 56B of the pants. The pant legs 58A, 58B are neatly folded  
12    together and then supported by the central clamp 14C of the hangers such that sections of  
13    the folded pant legs overlap one another in the vertical dimension as shown. In this  
14    manner, the vertical dimension of the pants is significantly reduced while maintaining a  
15    neat and orderly presentation to the customer. In fact, the hangers with the pants may be  
16    placed one under the other and take up the same amount of room as one prior art hanger  
17    with one pair of pants.

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19       In another example, consider utilizing a garment hanger in accordance with the  
20    present invention to hang two pairs of pants one under the other as shown in FIG. 4. In  
21    this case, the hook members 16 of the respective hangers 10 are supported by support  
22    members 54A, 54B extending from a vertical post (not shown). The outer clamps 14A,  
23    14B (and possibly clamp 14C) of the respective hangers are used to grasp onto the waists

1 56A, 56B of the pants. The pant legs 58A, 58B are neatly folded together and the ends  
2 60A, 60B of the folded pant legs are supported by the central clamp 14C of the hangers  
3 such that sections of the folded pant legs overlap one another in the vertical dimension as  
4 shown. In this manner, the vertical dimension of the pants is significantly reduced while  
5 maintaining a neat and orderly presentation to the customer. In fact, the hangers with the  
6 pants may be placed one under the other in the space-saving configuration as shown.  
7 Indeed, the configurations shown in FIGS. 3 and 4 provide space savings for storage of  
8 the already-hung garments in transport containers, cartons, and in warehouses.

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10 The garment hanger device of the present invention can be readily adapted for use  
11 in hanging other garments, such as a skirt. To hang such a skirt, the two outer clamps  
12 14A and 14B (and possibly the central third clamp 14C) can engage and support the  
13 bottom of the skirt, while the central third clamp 14C engages and supports the waist of  
14 the skirt. Alternatively, the two outer clamps 14A and 14B can engage and support the  
15 waist of the skirt while the central third clamp 14C (and if desired the two outer clamps  
16 14A and 14B) engages the bottom of the skirt.

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18 Advantageously, the garment hanging device of the present invention enables  
19 retailers to reduce the vertical dimension of a garment held by the clamp-type garment  
20 hanging device. This enables a large number of articles to be readily displayed and  
21 presented to potential customers for a given amount of wall or display space. Moreover,  
22 it enables a large number of articles to be readily displayed and presented in a space-  
23 limited retail environment. Further, when garments are shipped with the garment on

1 the hanger device, it enables a large number of articles on hangers to ship in a given  
2 container space or in cartons. Finally, the garment hanging device of the invention can  
3 be used to reduce warehouse storage requirements.

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5 There have been described and illustrated herein embodiments of clamp-type  
6 garment hanger. While particular embodiments of the invention have been described, it  
7 is not intended that the invention be limited thereto, as it is intended that the invention be  
8 as broad in scope as the art will allow and that the specification be read likewise. Thus,  
9 while a particular garment clamping mechanism has been disclosed, it will be appreciated  
10 that other clamp mechanisms may be used. In addition, while the clamp is shown  
11 securely attached to the hanger body as an integral part of hanger body, it will be  
12 understood that this attachment method is merely illustrative of the most cost effective  
13 method of manufacturing a sturdy, attractive hanger. Furthermore, the clamp may  
14 alternatively be made separately from a material that is the same or different from the  
15 material of hanger body, and may be fixedly or movably attached to the hanger body by  
16 known means or methods. Moreover, the clamp may also be attached to hanger body by  
17 one or more intervening elements, such as, for example, a bar or rod (not shown)  
18 supported below the hanger body. In addition, while straight crossbar members are  
19 shown, it will be appreciated that the term "crossbar" is intended to be broad and include  
20 cross members which are curved or otherwise shaped. Also, while the invention was  
21 described as being advantageously used in conjunction with particular garments such as  
22 pants and skirts, it will be appreciated that the garment hanger can be used in conjunction  
23 with other garments such as slips, stockings, leggings and various two-piece sets. It will

- 1 therefore be appreciated by those skilled in the art that yet other modifications could be
- 2 made to the provided invention without deviating from its spirit and scope as claimed.